

new issues which have not already been considered during prosecution of the application. Claim 2 contains a limitation to various types of motors.

Claim 7 has been amended to correct the syntax. At least two first through apertures is plural and the verb should be are.

Applicants respectfully request that the amendments be entered at this time since they place the application in condition for allowance or substantially reduce the issues for appeal.

Applicants herewith submit an ANNEX with the amendments shown in the claims.

Before discussing the rejections over the prior art, Applicants deem it prudent to set forth what they consider to be their invention. Applicants invention is a fluid control-mixing valve. The valve comprises a valve body, a motor, a first disk member defining at least two first through apertures each corresponding to and communicating with a separate fluid supply or outlet, a second disk member defining at least one second through aperture, wherein the first and second disk members are arranged in sealing contact and are variably alignable in a coaxial, constrained manner, so that the first and second through apertures are, in turn, variably alignable such that fluid may flow through the at least two first through apertures only when there is an overlap between the first and second through apertures and wherein variable alignment of the first and second disk members is obtained by relative coaxial rotation thereof by said motor. The flow rate and the mixing ratio of the two fluid supplies are varied by variable coaxial alignment of the first and second through apertures. Applicants respectfully submit that the invention is neither taught nor suggested by the prior art references cited by the Examiner.

Claims 1-8, 10-28, 33 and 34, all of the claims in the application stand rejected under 35 U.S.C. §103(a) as unpatentable over Saether (U.S. Patent No. 4,611,757) in view of Scheuermann (U.S. Patent No. 3,987,819). Applicants respectfully submit that Saether and Scheuermann whether considered alone or in combination neither teach nor suggest the present invention.

Saether discloses a mixing device for mixing two fluids especially hot and cold water. The Saether mixing device includes an electric motor which is adapted to turn a movable valve disk of the valve for controlling the temperature. However, to

adequately control the output of the valve, Saether also requires that a manual valve handle be operated to control the flow. Additionally, the valve of Saether would neither teach nor suggest the present invention since the motor acts on a valve disk to rotate the valve disk in an eccentric manner in relation to the stationary disk. In contrast to the teachings of Saether, the present invention requires that the disk be rotated coaxially and all of the control provided by the valve is determined by the relation of the stationary and the rotatable disk.

Applicants submit that Saether is not pertinent to the present invention. The rotation of the rotatable disk in relation to the fixed disk is not coaxial, requires a linear motion and requires a second source of rotation to provide the control required. Applicants respectfully submit that Saether neither teaches nor suggest the present invention.

The deficiencies in Saether are not cured by combination with Scheuermann. Scheuermann discloses a complex valve mechanism utilizing at least three stationary disk and two independently rotatable disks. Like the Saether et al. device, two independent sources of rotation must be provided to operate the valve mechanism. Although the two rotatable disks are coaxially rotatable in relation to the three-fixed disks. The rotatable disks must be independently rotatable to provide for temperature and flow control. Applicants respectfully submit that Scheuermann is not amenable to automatic control by a motor. In Scheuermann, at least two motors would be required. The requirement for two motors makes the complex valve even more expensive and requires a more sophisticated control scheme.

Applicants respectfully submit that the combination of Saether with Scheuermann is improper. Although both references are directed to valves, the Saether valve operates on a substantially different principal from the Scheuermann valve. There is no teaching nor suggestion in either of the references to make the combination. In addition, since the Scheuermann and Saether valve cannot be readily adapted for a single motor control, Applicants submit that there is no connection between the references and the present invention and respectfully submit that the rejection is improper.

There is neither teaching or suggestion in the combination of references for a stepper motor or DC motor.

There is no teaching nor suggestion of the valve of Claim 6 wherein at least one friction reducing region includes at least one region extending radially to the periphery of the first member. Likewise, there is no teaching or suggestion of an aperture which is substantially sector shaped or the second disk member is substantially a form of a disk having one or more removed sectors.

In view of the amendments entered in the claims and the above discussion, Applicants respectfully submit that the application is in condition for allowance and favorable consideration is requested.

Respectfully submitted,



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ANNEX

1.(Amended) A fluid control/mixing valve for use with at least two fluid supplies, said valve including:

a valve body;

a motor;

a first disk member defining at least two first [apertures] through-apertures, each corresponding to and communicating with a respective one of the at least two [corresponding] fluid supplies or outlets; and

a second disk member defining at least one second [apertures] through-aperture;

wherein the first and second disk members are arranged in sealing contact and are variably alignable in a coaxial, constrained manner, so that the first and second [apertures] through-apertures are, in turn, variably alignable such that fluid may flow through the at least two first [apertures] through-apertures only when there is an overlap between first and second [apertures,] through-apertures; and

wherein variable alignment of the first and second disk members is brought about by relative rotation thereof by said motor;

[such that] whereby the [flow] flow rate through [the or each] at least one of the second [aperture] through-apertures may be varied by variable coaxial alignment of the first and second [apertures] through-apertures; and

whereby the mix of the at least two fluid supplies which flows through at least one of the second through-apertures may also be varied by variable coaxial alignment of the first and second through-apertures.

7.(Twice Amended) A fluid control valve as claimed in Claim 1, wherein the [or each] at least two first [aperture] through-apertures [is] are substantially sector shaped.